

Applicant's invention as now claimed is directed to the concept of coating both the rotor slots and stator slots with a ceramic-based material which may be silicon or germanium prior to the slots being cast with molten conducting metal during a die cast process so that the laminations and intervening insulation of both the rotor and stator are protected from the adverse effects of the die casting process, i.e. the relatively high temperature necessary to maintain the conducting metal in a molten state, oxidation, and damage to the insulation between the laminations. Such a coating is chosen to have a high dielectric strength, low heat conductivity, high resistance to the action of chemicals and high strength.

The coating comprises a ceramic-based material which may be silicon or germanium, with silicon being the preferred material. In the preferred embodiment, the rotor and/or stator slot coating is comprised of a composition of silicon and aluminum and more particularly a composition of about 94.5 percent silicon and of about 5.5 percent aluminum. Such a composition has a melting point of about 2903°F, which is the lowest melting point for composition of silicon and aluminum, but is well in excess of the temperatures experienced during a copper die cast process and thus provides a desired protection for the rotor and/or core laminations and insulation. In another embodiment of the claimed invention, the rotor slot coating and the stator slot coating comprises a composition of silicon, aluminum and titanium, with the proportion

of titanium in the composition being between 2 and 3 percent.

The rejection of claims 1-8 and 15-21 are now moot in view of the present amendment.

Claims 9-14 were rejected under 35 U.S.C. §103 as being unpatentable over Tanaka in view of Fujii and further in view of Butman, Jr.. As stated by the Examiner, Tanaka and Fujii disclose a drive motor essentially as claimed except for coating the rotor slots with a ceramic material, but where Butman, Jr. teaches coating the inner surface of a rotor slot with silicon carbide to prevent corona and flashover between the conductors in the rotor core.

Applicant's invention, however, as now claimed, is directed to the concept of coating the slots of both the rotor and stator prior to the formation of the conductor material in the slots to protect the slots and the laminations from the adverse effects of the die casting process involved in applying conducting metal in the molten state into the slots. It is respectfully submitted that Butman, Jr. neither teaches nor suggests this feature of applicant's claimed invention. Furthermore, none of the other references, taken either singly or in combination, teach or suggest this concept, nor would such be obvious to one skilled in the art without hindsight provided by applicant's own disclosure.

Accordingly, all of the claims now present in the application are deemed to be in condition for allowance and therefore further and favorable action is requested.

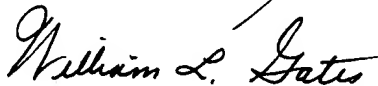
If the Examiner has any questions, the Examiner is requested to contact William L. Gates at (703) 205-8000 in the Washington, D.C. area, or Philip A. Florenzo at (410) 765-3128 in the Baltimore, Md. area.

Pursuant to the provisions of 37 C.F.R. 1.17 and 1.136(a), the applicant hereby petitions for an extension of three(3 months to March 25, 1996 for the period in which to file a response to the outstanding Office Action. The required fee of \$900.00 is being charged to Deposit Account No. 14-1325.

Please charge any fees or credit any overpayment pursuant to 37 CFR 1.16 or 1.17 to Deposit Account No. 14-1325.

Respectfully submitted,

By



William L. Gates
Reg. No. 20,848

BIRCH, STEWART, KOLASCH & BIRCH, LLP
P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000